

The Institution of Engineers, Australia: Sydney Division  
Engineering Heritage Committee  
**ORAL HISTORY PROGRAM**

### INTERVIEW TAPE LOG

INTERVIEWEE: **Jack ROSE**

TAPE NUMBERS: **IEA SYD: MC 9 to 12**

INTERVIEWER: **Michael Clarke**

DATE: **26 August and 2 September 1999**

NUMBER OF TAPES: **4**

RESTRICTIONS ON USE: **None**

LOG PREPARATION: **Sanyo Memo-Scriber TRC - 8080**

Tape: **IEA SYD: MC 9 Side A**

**26 August 1999**

TAPE COUNTER	SUBJECT	NAMES & KEYWORDS
00 - 21	Jack Anthony <b>ROSE</b> , born 21.7.19 at Forest Lodge. Father carpenter, two brothers and two sisters. Dux of Forest Lodge Primary School about 1937 (corrected in later discussion to 1931).	Forest Lodge. Forest Lodge Primary School. Girrilambone. Bourke
21 - 33	Developed interest in the university.	Sydney University
33 - 54	Fort Street High School about 1932, graduated from there - Leaving Certificate (LC) in 1937. Main influence the Deputy Head Mr Harrison.	Fort Street High School. Deputy Head Mr Harrison.
54 - 67	Hobbies and pastimes. Made model aeroplanes and played sport. Built and designed own aircraft.	Aircraft design and manufacture.
67 - 82	Preferred interest was aeronautics. Gained AWA (Amalgamated Wireless Australia) traineeship.	AWA
82 - 100	Discusses academic attainments both at school and Technical College.	
100 - 126	Describes five year training period at AWA. Operated what became the Overseas Telecommunications Commission (OTC) and air radio services. Nine men with doctorate degrees - two in engineering - the others in science. Fundamental research.	AWA training program. Overseas Telecommunications Commission (OTC). Air radio services.
126 - 169	Development during Second World War of 10 kW transmitter for navy and US army. Describes special testing factory built in Glebe. Comment about radiation from mobile phones being say 10 million times less than radiation from test facility, which caused no effect.	10 kW transmitter. Special testing factory. Mobile phone radiation.
169 - 177	During war wrote Air Force instruction manual for radio direction finding. Became the basic document for the <i>Jindalee</i> project.	Radio direction finding. <i>Jindalee</i> project.
177 - 226	Formal training at Sydney Technical College (STC). Did both Electrical Engineering (EE) and Radio Engineering (RE) Diplomas. Problems of attending evening lectures whilst working 12 hour days, 6 days per week and 8 hours on Sunday at AWA. Five year course for EE and two years extra to gain RE Diploma. With good practical experience could gain Mechanical Diploma in one further year. AWA factory was at Ashfield on Parramatta Road opposite the end of the Great North Road.	Sydney Technical College. Electrical Engineering and Radio Engineering Diplomas. 12 hour days working 7 days per week. AWA factory at Ashfield on Parramatta Road opposite the Great North Road.

Continuation of tape: **IEA SYD: MC 9 Side A**

TAPE COUNTER	SUBJECT	NAMES & KEYWORDS
226 - 276	During war given control of factory at age 24. Making marine transmitters. Faults started to develop with 12 hours shifts.	Marine transmitters.
276 - 295	Radio engineering course similar to today. Made own radio and TV receivers.	
295 - 353	Married whilst at AWA and had first daughter. Became Chief Engineer of Transmission Products Ltd (TPL). Left after short period because of poor ethics of company, to join Commonwealth Acoustics Laboratory (CAL). At TPL designed radio range receiver - guidance system for beam radio to guide aircraft. TPL also made scientific instruments.	Marriage. Transmission Products Ltd. Mr Reid Chief Engineer, AWA. Commonwealth Acoustics Laboratory. Radio range receiver.
<b>End side A, tape MC 9</b>		

Tape: **IEA SYD: MC 9 Side B**

TAPE COUNTER	SUBJECT	NAMES & KEYWORDS
00 - 16	Joined Commonwealth Acoustic Laboratory (CAL) as a draughtsman. Became engineer. Seven employed and rapidly increased in size.	Commonwealth Acoustic Laboratory (CAL)
16 - 42	Joined CAL in 1947. Describes work of CAL. Rose designed communications headset for navy aircraft carriers to improve communications between flight deck and pilots. CAL mainly concerned with design of audiometric equipment better than commercial units and special audiological equipment. Australia lead world in child hearing testing.	CAL. Child hearing testing. Rubella.
42 - 73	CAL involved in development work due to lack of commercial expertise in electro acoustics as there were no standards and commercial equipment was poor. Describes audiometry standards adopted.	Audiometry standards.
73 - 187	Interest in hearing loss being driven by war induced damage - describes causes. Also industrial deafness. Sir John Eccles physiologist for original acoustic research lab. designed anatomically shaped earplugs used by troops and flyers well in advance of commercial ones - description and comparison with British Air Force plug. Teaching deaf children to speak. mentions how hearing impaired people become isolated. Achieved a decrease in cost of servicing hearing aids.	Sir John Eccles. Advanced anatomically shaped earplugs.
187 - 191	Name of CAL changed to National Acoustics Laboratory (NAL) under Whitlam Labor Government.	National Acoustics Laboratory (NAL). Whitlam
191 - 233	Involvement with Sydney Opera House (SOH) . Noise survey of the precinct commissioned by government. Trains crossing Sydney Harbour Bridge and fog horn most dominant noise sources. Only 5 people working on noise and noise reduction in Australia in 1960s. Also doing work for government departments - armaments factories; and NSW, Queensland, Western Australian Government Railways. Did first successful hearing conservation study in Royal Australian Air Force (RAAF).	Sydney Opera House (SOH). Government railways. Hearing conservation study in Royal Australian Air Force.



Continuation of tape: **IEA SYD: MC 9**

TAPE COUNTER	SUBJECT	NAMES & KEYWORDS
233 - 276	Noise levels at SOH site given to NSW Government with suggestion of amount of insulation required on a decibel basis, to eliminate noise. Met Jørn Utzon when lecturing to Master of Architectural Science degree course at Sydney University with Prof. (Jack) Cowan. Story about Utzon's technique for winning competitions. Rejected Utzon's invitation to become acoustic consultant (not his field) after others advised Utzon his designs would not work acoustically.	Insulation SOH. Jørn Utzon. Master of Architectural Science course at Sydney University. Prof. (Jack) Cowan. Acoustics
276 - 335	Discussion of acoustics of SOH Concert Hall. Feels basic problem is the space created by the arch.	Acoustics of SOH Concert Hall.
<b>End side B, tape MC 9</b>		

Tape: **IEA SYD: MC 10 Side A****26 August 1999**

TAPE COUNTER	SUBJECT	NAMES & KEYWORDS
00 - 41	Further discussion of acoustics of Concert Hall and its use for International Congress of Acoustics. Sir Zelman Cowan's opening address reprinted in Australian Acoustical Journal. Leonine Consort and Julian Lee performed.	Concert Hall. International Congress of Acoustics. Sir Zelman Cowan. Australian Acoustical Journal. Leonine Consort and Julian Lee.
41 - 77	Set up noise research section in National Acoustic Laboratory. Hearing aid service had grown dramatically due to pensioners by 1974. Identified need for hearing conservation in defence services and private industry, and aircraft noise was becoming a major problem. Studies done before jet aircraft arrived in Australia. First major measurements on <i>Super Constellation</i> . Discusses method of rating severity of noise problem using the degree of complaint from the community.	Noise research section, National Acoustic Laboratory. Hearing aids. Hearing conservation. Aircraft noise. <i>Super Constellation</i> .
77 - 209	Rose took over the new noise research section virtually as a new discipline. Prime area was industrial noise. Anecdotes about deafness in industry. Major Australia-wide program on hearing conservation. Australia lead the world. Describes the five basic steps of a hearing conservation program. Discusses standards for measuring industrial noise - the "Great Australian Simplification" - 'A' Weighting. Re wrote the instrument standards at meeting of International Electro Technical Commission (IETC). Describes functions of various UNESCO offshoots: International Standards Organisation (ISO), International Civil Aviation Organisation (ICAO) and International Union of Pure and Applied Physics (IUPAP). International Air Transport Authority (IATA) is not part of UNESCO - it represents the airlines. Introduction of world-wide freedom of aircraft movement and certification. ICAO set up to standardise certification of aircraft, navigation and landing systems etc. so the same techniques could be applied world-wide. Sixteen annexures to Chicago Convention of 1946. First was on aircraft noise which came out of Australia.	Hearing conservation program. Brewell's sound level meter - 2003 (1203?). "Great Australian Simplification" and 'A' Weighting. International Electro Technical Commission. International Standards Organisation. International Civil Aviation Organisation. International Union of Pure and Applied Physics. International Air Transport Authority. Chicago Convention of 1946.

## Continuation of tape: IEA SYD: MC 10 Side A

TAPE COUNTER	SUBJECT	NAMES & KEYWORDS
209 - 335	Rose instrumental in getting ICAO to set up special meeting on aircraft noise (1969). Jim Harper of Australian delegation chaired meeting. Aust. delegation worded two thirds of the resolutions. Meeting recommended to ICAO that a certification system be set up. All aircraft to be certified for their noise output. Describes the outcomes.	Minister for Civil Aviation, Reg Schwartz. Aircraft Noise Committee. Jim Harper. ICAO. Pratt and Whitney. General Electric. Rolls Royce. RB211 engines.
335 - 378	Describes functions of committee working groups - writing standards etc. Rose represented Australia. Meetings in French.	
<b>End side A, tape MC 10</b>		

## Tape: IEA SYD: MC 10 Side B

26 August and 2 September 1999

TAPE COUNTER	SUBJECT	NAMES & KEYWORDS
00 - 15	Meetings held in English from about 1970.	Paris
<b>Continuation of interview on 2 September 1999</b>		
15 - 56	Seconded to QANTAS, Trans Australian Airlines (TAA) and Ansett, and R Travers Morgan Group for Second Sydney Airport Study. Role was to predict the types of noise levels likely to be generated by future aircraft, sizes and types of aircraft. Consultant to Major Airports Needs of Sydney Study (MAANSS). Comment that decisions often made on political basis rather than on technical merits. Badgerys Creek came out of MAANSS.	QANTAS. TAA. Ansett. R Travers Morgan Group. Second Sydney Airport Study. Major Airports Needs of Sydney Study. Badgerys Creek
56 - 83	Comment on not supporting insulation of houses to exclude aircraft noise.	House insulation against aircraft noise. Wiley Laboratories.
83 - 276	Description of advice provided to airlines - major role in design and placement of engine test houses. Describes the purpose of engine testing, what occurs, test control procedures etc. Through ACAO Australia was able to put the pressure back on the engine manufacturers for guarantees of thrust, fuel efficiency and noise output. Also had control rooms built into ships so they could be driven without exposure to engine noise; also reduced noise for passengers.	Engine test houses. QANTAS. TAA. Ansett. Ron Yates. Pan Am. Bob Bennett. JT 9 Pratt and Whitney engines. ACAO.
276 - 365	Discussion of involvement with Parliamentary Select Committee on Aircraft Noise 1968-70 over two parliamentary terms. Considered effect of noise from both military and civilian aircraft on communities. Final report and parliamentary debate highly complimentary of Rose.	Parliamentary Select Committee on Aircraft Noise.
<b>End side B, tape MC 10</b>		



Tape: **IEA SYD: MC 11 Side A**

TAPE COUNTER	SUBJECT	NAMES & KEYWORDS
00 - 19	Contribution to Parliamentary Select Committee on Aircraft Noise - wrote all technical aspects of final report and proposed more than 50 recommendations, 37 of which were accepted; and most have now been carried out. The last was the definitive social survey by NAL of aircraft noise around Australia. Title of report: <i>Report from the House of Representatives Select Committee on Aircraft Noise, October 1970.</i>	Parliamentary Select Committee on Aircraft Noise. Social survey of aircraft noise. <i>Report from the House of Representatives Select Committee on Aircraft Noise, October 1970.</i>
19 - 101	Activities of ICAO. (See also tape MC 10 side A). Working parties in Montreal. Advantage of time difference between Montreal and Australia, where work was being done while negotiators were sleeping, with results faxed back by next morning.	ICAO. Reg Schwartz. Buenos Aires. Jim Harper. Montreal.
101 - 226	Stimulus to the setting by ICAO of noise limits for aircraft. Problems emerged worldwide from about 1950. Discussion about noise insulation of houses. Noise level limits proposed by Australia arising from Rose's experience. System built in for review every two years. (See also tape MC 10 side A). System for certification of aircraft. Enforcement of regulations.	Noise limits for aircraft. Badgerys Creek.
226 - 253	Discussion of changes in aircraft design and operating procedures resulting from ICAO regulations - fans of turbo fan engines became larger and Rolls Royce scrapped the front end of their RB211 engines and prepared a new design sending company bankrupt.	Rolls Royce RB211 engines.
253 - 364	Discussion of Joint House Committee on Communications Systems for new Parliament House. Division bells problems.	Joint House Committee on Communications Systems for new Parliament House. Division bells.
<b>End side A, tape MC 11</b>		

Tape: **IEA SYD: MC 11 Side B**

TAPE COUNTER	SUBJECT	NAMES & KEYWORDS
00 - 59	Discusses lecturing for about 5 years in School of Architectural Science at Sydney University with Prof. Jack Cowan. Some work for University of NSW. Supervised some master's theses. Lectures predominately about noise measurement systems and engineering noise reduction. Quite impressed with the Architectural Science course - trying to create a more scientific approach in people that were basically visualists.	School of Architectural Science, Sydney University. Prof. Jack Cowan. University of NSW. Noise measurement systems. Engineering noise reduction.
59 - 135	Not involved in Roads and Traffic Authority's "Quiet House Project". Doesn't agree with house insulation against noise. Feels a lot of nuisance can be reduced by eliminating the site of the noise source. Comment on preserving confidentiality in office, board rooms, and organisational situations.	Roads and Traffic Authority. Horrie Weston. National Crime Authority.

Continuation of tape: **IEA SYD: MC 11 Side B**

TAPE COUNTER	SUBJECT	NAMES & KEYWORDS
135 - 333	Discussion of its formation and Rose's involvement in Australian Acoustical Society. Decision to form about 1964 on initiative of acoustical consultants in Melbourne, Sydney and CAL to promote the field of acoustics, then in its infancy. Rose was Chair of NSW group whilst Society being set up. Society included sub professionals, students and subscribers. H Vivian Taylor was first President. Aim is basically the advancement of acoustics; has code of ethics; defined qualifications for promotion through grades of membership. Nine main branches of acoustics. Annual conference. Society has origins in International Commission of Acoustics (IAC), part of International Union of Pure and Applied Physics, which is responsible for promoting acoustics world wide and allocates the area of physics to be covered by various commissions. Rose nominated to ICA by Australian Academy of Science and approved by Government. Commission funded by UNESCO and funds conferences, seminars etc. Discusses overlap of areas of acoustics. Rose initiated WESTPAC conferences. Rose Chaired International Congress, Australia in 1980 at University of NSW. 10 Commissioners world-wide. Rose first Commissioner from southern hemisphere 1977-83. Commission now has 15 members with Australia providing a Commissioner.	Australian Acoustical Society. H Vivian Taylor. The Institution of Engineers. International Commission of Acoustics. International Union of Pure and Applied Physics. Australian Academy of Science. UNESCO. Light weight structures. International Congress, Australia, 1980. University of NSW. Prof. Lara from Spain. Prof. Neville Fletcher.
<b>End side B, tape MC 11</b>		

Tape: **IEA SYD: MC 12 Side A**

TAPE COUNTER	SUBJECT	NAMES & KEYWORDS
00 - 124	Discusses his design of new Laboratory for Research Into Human Hearing at Chatswood. Defines an anechoic room, their design, importance of location, and mentions the dangerous nature of many of them. Describes the laboratory. Whilst facility can measure commercial and industrial noise levels and vibrations, main concept was to look at complete range of human hearing. Has been described as the best acoustic laboratory in the world. Describes tests carried out. At present, much necessary research is not being performed due to Government cut-backs in funding - facilities are to a large extent idle. Facilities now being used by commercial companies.	Laboratory for Research Into Human Hearing. Chatswood. Anechoic room.
124 - 339	Discusses "notable hairy moments". Ramming of caisson of a dry dock in Williamstown Naval Dockyard by <i>HMAS Vendetta</i> . Same captain that ran down the <i>HMAS Voyager</i> . Vibrations in <i>Vampire</i> jet aircraft. Found there was a resonance in the main spar of the wing and so <i>Vampires</i> were taken out of service world-wide. Down ConZinc - Rio Tinto mine in Broken Hill.	Williamstown Naval Dockyard. <i>HMAS Vendetta</i> . Norman Murray. <i>HMAS Voyager</i> . <i>Vampire</i> jet aircraft. ConZinc - Rio Tinto mine. Broken Hill.
339 - 363	Retired due to age requirement at aged 65 in 1984. Set up own consultancy mainly in acoustical security - National Crime Authority, board rooms of private companies and Costigan Royal Commission (refer also to tape MC 11 side B).	National Crime Authority. Costigan Royal Commission.



Tape: **IEA SYD: MC 12 Side B**

TAPE COUNTER	SUBJECT	NAMES & KEYWORDS
00 - 209	Continuation of discussion of provision of acoustical security for National Crime Authority etc. Very poor security of Costigan Royal Commission. Security for Sir John Kerr's office after he ceased to be Governor General. Describes Kerr's existence - only known visitors were Sir Garfield Barwick and Gerard Henderson from Sydney Morning Herald. Kerr and Rose both 'Fortians' (old boys of Fort Street High School). Did acoustics for Expos '67 (Montreal) and '71 (Osaka) - description.	National Crime Authority. Costigan Royal Commission. Sir John Kerr. Governor General. Sir Garfield Barwick. Gerard Henderson. 'Fortians'. Expos '67 and '71. Montreal. Osaka.
209 - 224	Closed consulting business about 1997. Retirement involves furniture restoration, toys for grandchildren, golf and bowls.	
224 - 270	Final remarks. Pleased Acoustical Society progressing.	Acoustical Society.
<b>End side B, tape MC 12</b>		